Blanco River — *A. E. Kaeppel*

The Humble Way

MARCH-APRIL, 1958

Tanker loading at Baytown Refinery docks. Wide fluctuations in such loadings were experienced in 1957 because of changes in export demand.

The Humble Way
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ANNUAL REPORT SHOWS YEAR OF CONTRASTS

INTO the mails, late in March, went the summing up of Humble's activities of the past year—the Company's 41st annual report. To more than 10,000 shareholders on the mailing list, as well as to some 19,000 employees, the 1957 report presented a picture of change and contrasts.

For both Humble and the petroleum industry generally, says the report, 1957 began with operations at a high level. Closing of the Suez Canal had brought a sharp increase in demand, and as the European oil lift gained momentum, inventories began to decline. Early in January, for the first time in more than three years, there was a general increase in the price of crude. In March, domestic production reached an all-time high of 7,700,000 barrels a day.

The second quarter, however, saw an abrupt change. With the opening of the Suez Canal, exports fell off rapidly. It soon became apparent, also, that domestic demand was not measuring up to expectations. One major factor among those causing the reduction in demand for domestic production was the resumption of high levels of imports of foreign crude oil.

The cumulative effect of these economic forces, Humble's annual report states, was a progressively severe restriction of domestic crude oil production during the latter part of the year. At the same time, inventories increased to burdensome levels, thus contributing to softness in product prices and, in several areas, to the outbreak of gasoline price wars. Crude prices also began to show some signs of weakness.

These changing conditions had a considerable impact upon Humble's operations and net income.

In March, for example, Humble's net crude oil production reached an all-time high of more than 419,000 barrels a day. Subsequent cutbacks in production rates, however, lowered the Company's average for the year to 360,600 barrels daily, or 2.8 per cent

under that of 1956. By December, when only 12 producing days were allowed in Texas, Humble's daily production of 329,600 barrels was less than half the amount its wells were capable of producing efficiently.

ANOTHER record was set in March when Humble Pipe Line Company's trunk line deliveries averaged nearly 800,000 barrels a day. By October, however, deliveries of 597,700 barrels daily were at the lowest level in three years. At the Baytown refinery, average crude runs declined to 234,500 barrels a day, down 10.4 per cent from 1956's record level. In its retail marketing activities, Humble maintained its leadership in gasoline sales in Texas and substantially increased its sales in New Mexico, but price wars and highly competitive marketing conditions reduced profits during the last half of the year.

These operational developments were reflected in the Company's earnings. In the first half of the year, Humble earned $107,788,500 after taxes—an unusually large amount. In the second half, income decreased sharply because of the lower rate of operations and unusually heavy charges for surrendered leases. For the entire year, therefore, net income was $175,910,400, or about $3,000,000 less than in 1956. Net income per share, based on the number of shares outstanding after the stock split in May, was $2.45, or four cents a share less than in 1956.

In addition to the decline in net income, there was also a drop in the rate of return on investment. The shareholders' investment increased by $80,514,100, and at the end of the year it stood at $1,338,096,100. Yet, as has been the trend in recent years throughout the domestic oil industry, the Company's earnings failed to keep pace with its increased investments.

Contributing to the lower return on investments was an increase of $85,230,000 in costs, expenses, and taxes, which was more than enough to offset an over-all rise in gross revenues. Dry hole costs, for instance, amounted to $61,792,100, or about $13,700,000 more than in 1956. (These dry hole costs were 42 per cent of all drilling expenditures.) Surrendered leases cost nearly $16,200,000 more than they did in 1956, and payrolls and other employment costs were up nearly $16,200,000.

Capital expenditures of $235,395,400 were $51,487,400 more than in 1956, the largest in the Company's history. Most of the increases in capital expenditures went into refining facilities designed to upgrade quality of products and to provide more flexibility in the processing of crudes.

Drilling activities were marked by a decline in well completions and by sharply rising costs. Although Humble increased its drilling expenditures by more than $18,000,000, the number of completions dropped from 905 in 1956 to 867 in 1957. One reason for the rise in drilling costs was an increase from 41 to 71 in the number of offshore completions, at an average cost of $585,200 a well. Other factors operating to increase average costs per well were the drilling of more and deeper wildcat wells (169 in 1957, compared with 152 the year before) and the continued rise in the costs of labor, goods, and services.

At the end of the year, Humble was operating 13,457 producing wells, a gain of 312 wells over 1956.

THE 1957 report points to several favorable developments in the Company's operations: productive capacity continued to increase, and reserves of both oil and gas reached record highs; there was a substantial increase in revenue from natural gas; and Humble continued to expand its petrochemical activities. The Company's production of paraxylene, used in making a synthetic fiber, more than doubled to reach a record level of 40,200,000 pounds. The new benzene plant, completed early in 1958, is the largest unit of its kind in the world.

In his letter to shareholders and employees, President Morgan J. Davis noted that imports continue to pose a serious problem for the domestic petroleum industry. Citing the sharp decline in exploratory activity, Mr. Davis said that "prompt action is needed to prevent further serious injury to domestic petroleum operations and to the general economy." He named the problem of federal control over field prices of natural gas as another factor that continues to handicap the industry.

Humble's president went on to say that, provided solutions are found to these and the other problems currently confronting the industry, the long-range outlook is one of continued growth.

HIGHLIGHTS OF 1957

	1957	1956
FINANCIAL DATA		
Shareholders' Investment	$1,338,096,100	$1,257,582,000
Net Income	$175,910,400	$178,961,100
Dividends	$96,902,200	$86,072,400
Capital Expenditures	$235,395,400	$183,908,000
Per Share:		
Net Income	$2.45	$2.49
Dividends	$1.35	$1.20
OPERATING VOLUMES		
Net Crude Oil Production—Barrels Daily	360,600	371,000
Crude Oil Refined—Barrels Daily	234,500	261,800
Trunk Line Deliveries—Barrels Daily	675,200	699,700
Net Natural Gas Sales—Million Cubic Feet Daily	1,119	1,065

Dry holes, which in past 40 years have cost Humble half a billion dollars, illustrate staggering risks peculiar to the American oil industry. Above, crew members unceremoniously prepare to "abandon site" of Texas Gulf Coast duster, move to new drilling location.

THE HIGH COST OF DRY HOLES

They've always been a big problem in the oil business, but lately their costs have increased by alarming leaps and bounds

THE dry hole is many things. To the geologic map-maker, it is merely a small circle transversed by a straight line. To the roustabout on the drilling crew, it is change of address. To the small, "po' boy" wildcatter, it is disappointment, heartbreak, and all too often economic disaster.

To an oil company like Humble, the dry hole is a perplexing paradox: unavoidable, enormously expensive, yet necessary to the search for oil. Last year, dry holes cost Humble almost $62 million, roughly $13 million more than in 1956. But oil can't be found without drilling for it. And when you drill, the odds are strong you will find nothing.

In forty years, Humble has poured half a billion dollars down long, dry holes. That's nearly half as much as the Company's total assets today. Just since 1933, Humble has drilled 3,540 dusters averaging a mile and one-third in depth. End on end, they would probe two-thirds through the earth, or stretch from New York to San Francisco—via the Panama Canal.

Like nothing else, the dry hole tangibly and dramatically illustrates the staggering risks peculiar to oil hunting. It has been said of the oil business that if the gushers produce the ro-

Dry holes cost the industry about a billion dollars a year . . . almost forty cents for every barrel of oil produced

mance, and dry holes the tragedy, there are few parts romance to many parts tragedy. All who drill for oil do not live happily ever after.

American business is characterized by risks taken against odds in the hope of profit and progress. But risks in the oil-finding business are greater, and considerably different from those in other businesses. Little or nothing is recovered from the dry hole. In fact, the search for oil entails not so much a consideration of risks as it does the *certainty of loss*. The searcher cannot know how many losses he will sustain, how frequently they will come, or how costly each will be. But he can depend on losses due to dry holes.

He can also draw some sobering conclusions from the experiences of other oil hunters.

Only one in nine rank wildcats the industry drills produces oil or gas. Only one exploratory well in 44 finds a field that will produce a million barrels—enough to supply America a scant four hours. Anything smaller, the industry has found, is usually not profitable to produce.

Even after a field is found, dry holes continue to be a major headache. The only sure way to determine the field's productive limits is to keep drilling at locations farther and farther away from the discovery well. At this point, the oil hunter has mixed feelings: He dreads the dry hole, but is never satisfied until he hits one. One development or field well in four is a dry hole, but often the average is much higher. In one proven East Texas gas field, Humble drilled seven dry holes in 12 attempts.

ASIDE from dry holes, marginal and even big producers are sometimes teasers, inducing owners to throw good money after bad. For example, back in March, 1923, the spectacular Kosse gusher came in and for 36 hours spewed oil over the Texas countryside.

Eight days later, the freak well sputtered and stopped after flowing only 38,000 barrels of oil. But oil fever is contagious and impossible to quarantine. Almost overnight, Kosse's population increased by five-fold. Subsequent wells turned up either dry or with no commerical shows; today, the Kosse field is an abandoned, one-well field. Gas still bubbles from the black earth around the discovery well, but 29 dry holes sit in mute warning.

'Twas ever thus in the American oil industry. Ancient petroleum records show that not one, but two wells were drilled in the historic year 1859. One, of course, was the famous Drake well at Titusville, the birthplace of the industry. Ironically, the other well was bone dry. Nobody seems to recall where or by whom it was drilled.

TODAY, 99 years and a million and a half wells later, the oil man still is drilling dry holes with rueful regularity. Dry holes cost the industry about a billion dollars a year—almost 40 cents for every barrel of oil produced. Still more millions are lost on surrendered leases and unsuccessful exploratory work. Only about five per cent of all acreage leased proves even mildly productive. In all, about half of all the money spent on exploration and drilling results in no production.

As if the sky weren't bleak enough, new storm clouds have been gathering on the lip of the horizon, especially in the past ten years. Dry hole frequency has been inching up. Dry hole costs, on the other hand, have skyrocketed—almost to the point of jeopardizing the health of a natural resource industry, one essential to the nation's welfare and security.

Humble's dry hole experience reflects a reasonably accurate picture of the industry-wide problem. Over its 40-year history, the Company has suffered about one dry hole in every four drilling attempts—rank wildcats thrown together with development wells in proven fields.

Dry hole frequency is geared chiefly to the amount of wildcatting in risky areas, and therefore fluctuates widely in different years. Humble's drilling average, if anything, has improved since the early years.

The dry hole cost picture is not so pretty. In the first 20 years of drilling, dry holes never cost Humble more than $3 million. By contrast, the Company now has nine dry holes in the debit column that cost in excess of $1 million each.

Three of these were drilled in 1957. One, an offshore wildcat, had a good show of gas until Hurricane Audrey came and the hole was lost. Another was a 17,800-footer into the hard, hard crust of West Texas. The third, Humble's most expensive dry hole on record, was likewise on dry land—in the rugged foothills of California. Several other dusters—on and offshore—nudged the $1 million cost mark.

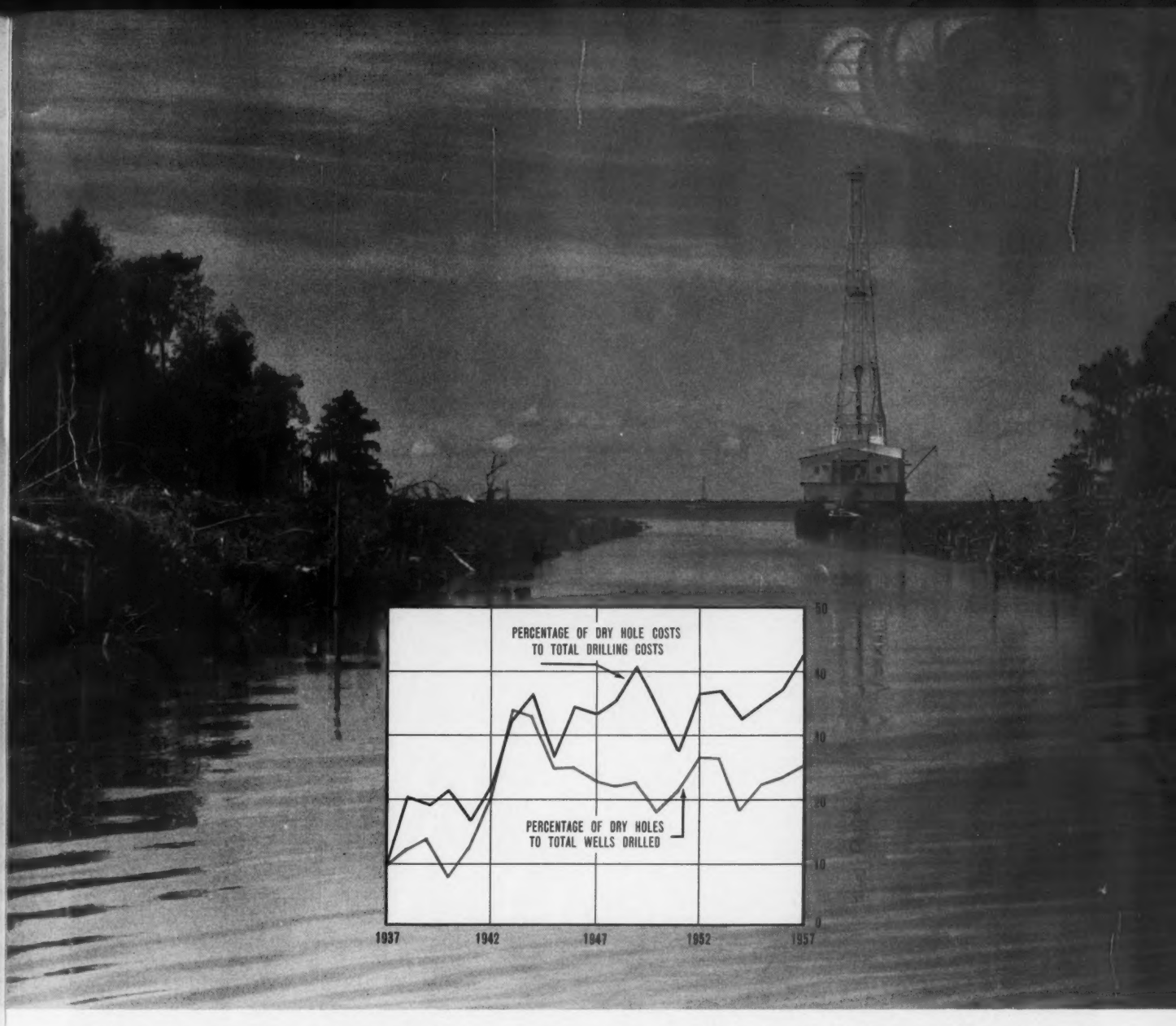
Because dollar values have been highly inconstant over the years, the most reliable measuring stick of climbing dry hole costs is their percentage of total drilling expenditures. The trend is clear. Dry hole outlay in 1937, Humble's all-time peak drilling year, represented only 10 per cent of drilling costs. In 1957, it soared to *42 per cent.*

HUMBLE has not been as adroit at sidestepping dry holes as some companies, but more successful than most. In any case, Humble's experience plainly indicates that dry hole costs have risen far out of proportion to dry hole frequency.

Why?

The "why's" of pyramiding dry hole costs are many and complex. Some involve changing concepts in oil-finding; other are simple but substantial increases in cost of materials and labor. A few of the high costs can be curbed; many cannot.

For one thing, oil is getting increasingly tough to find. Gone is the easy oil in the shallow sands. Areas that would not have warranted a second look ten years ago are good prospects today. Beckoned by the memory of



Humble's dry hole experience has been erratic, but getting worse. In 20 years, dry hole costs quadrupled from 10 to 42 per cent of drilling expenditures. Dry hole frequency in 1937, the Company's peak drilling year, was one in ten; in 1957, it was one in four.

the billion-barrel fields of yore, oil men have turned to places of difficult access: jungles, mountains, deserts, arctic wastelands, and the open sea.

Frontier drilling—such as Humble has done in the Louisiana swamps, Florida, California, the Gulf of Mexico, and now Alaska—is almost prohibitively expensive. But oil men are risk-takers, pure and simple, and the profit motive is strong. If they figure oil is trapped somewhere, they go after it.

Sometimes this pays off, but not always. Florida, for example, began to look highly promising back in 1943. The industry sank millions there but has found virtually nothing. Humble brought in the only commercial oil field, a small one, but also reaped a harvest of 38 dry holes.

Offshore in the Gulf, 75 companies have invested $2 billion in the search for oil. And still the total daily production is but enough to serve the nation 15 minutes. Here, drilling is generally conceded to be five times as expensive as on the land. Humble could drill four wells in any one of several onshore Gulf Coast fields for the price of one helicopter used to transport crews to offshore rigs.

Deeper drilling is another reason for rising dry hole costs. Twenty-five years ago, a 10,000-foot hole was considered deep: the first one, a dry hole in California, was in 1931. Today, several wells have probed the earth more than four miles. One of these, a 21,687-footer in Pecos County, is Texas' deepest and another dry hole. The depth of the average Humble-drilled dry hole 20 years ago was 4,601 feet. Last year, this was almost doubled.

Deep wells require more time, bigger and heavier equipment, more and better muds and cements, and special safety precautions. Not only oil-finding tools, but oil-finding ideas are stretched well past their limits. All this costs handsomely—and the cost of deeper drilling is not merely greater. The deeper the well, the more the rate of cost is accelerated. For example, the normal drilling cost of an 8,000 foot

The rising costs of finding and producing oil have far outdistanced oil price increases

well is $14 per foot. For a 15,000-footer, this jumps to $35 per foot. The world's deepest well, in Louisiana, bottomed at 22,570 feet; it cost $110 for each twelve inches.

Generally, the oil fields being found today are smaller, deeper, less accessible, and more complicated geologically than those found in earlier years. And Mother Nature assigns whole batallions of gremlins to the dry hole detail —high pressures, crooked holes, and weather problems to name a few.

LEADING oil explorers are warning that under present trends, the cost of finding U. S. oil may soon equal the value of the oil. In addition to deeper drilling in more difficult locations, they have in mind many other factors that are pushing exploration and drilling costs skyward.

Competition is keener than ever before for leases; farmers and ranchers get more for permits to explore on their land. Brainpower and scientific equipment are more expensive. Drilling trucks cost three times as much; dynamite is up 60 per cent. Wages of workers in field crews on geological and geophysical surveys have nearly doubled since World War II. Overall, exploration costs have doubled and tripled since 1948.

Humble figures also illustrate today's higher cost of drilling. Tubular goods and labor cost 56 per cent more than ten years ago. Oil field machinery like draw works and blow-out preventers are up about 60 per cent. Drilling muds, cement, well services like logging and perforating—all are twice as costly as a decade ago.

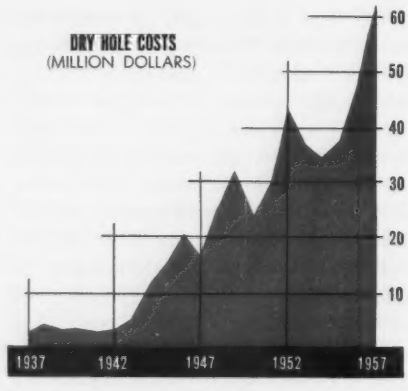
How can high exploration and drilling costs—and in turn, high dry hole costs—be curbed?

Both economists and engineers believe that rampant dry hole costs could be partially controlled with a wider spacing of wells. Today's knowledge of reservoir behavior is so great, they insist, that wider spacing would allow for proper drainage of oil and at the same time make domestic producers more competitive in the world-wide petroleum industry.

One cost-control method Humble found expedient during the depression years was a more cautious selectivity of drilling sites. Only the bread-and-butter wildcats with better than average potential were sunk. The high-cost frontier areas were avoided. This, however, was a temporary measure. Today, no oil company can long survive unless part of its time and money is devoted to the long-shot—fields that might really pay off.

A more long-sighted approach to reducing dry hole odds and costs involves better trained men and an improved technology. New exploration tools and techniques, developed through research, whittle away at the risk and enhance the possibility of finding oil.

Similarly, efforts to control drilling costs result in better methods, materials, and equipment. Emphasis in the past decade has been on improved hydraulics, special drilling bits, and well services like formation fracturing. Emphasis in the next ten years, drillers predict, will be on ultra-slim hole drilling. Reducing a hole from seven to two inches will result in tremendous steel savings in some wells. Humble is a leader in the slim hole movement.



Sharply rising dry hole costs of Humble reached a record $62 million last year.

Cooperative drilling allows companies to cut costs by spreading the risk. By one method, several major companies put up "dry hole money" to encourage a small independent to drill a test well in an area where they own leases. If the wildcatter hits, he has himself an oil well and the majors pay nothing. If he misses, the subscribers foot a predetermined portion of the bill.

Another share-the-risk arrangement sees major oil companies teaming up to move into an especially costly territory—such as Humble and Shell did last year in Alaska. Preparing for and drilling the Bear Creek No. 1 probably will cost nearly half as much as the $7 million the U. S. paid for the whole of Alaska back in 1867. Only through joint risk-taking was the venture possible.

Maligned as they are, dry holes are not completely worthless. They aid the search for oil by adding information to the storehouse of knowledge about underlying strata and by outlining the productive bounds of known fields. If nothing else, they show you where the oil isn't.

SOMETIMES, dry holes betray valuable underground deposits of other natural resources—sulphur, potash, water, brine, even helium. Seventy per cent of the nation's uranium reserves were discovered in New Mexico when a gamma ray instrument was lowered into the depths of an unsuccessful oil well.

The dry hole, which represents the negative side of a positive-thinking industry, is here to stay. Long ago, the oil man learned to live with it. But behind the dilemma of the dry hole looms a more basic problem: the American oil man is finding less oil with each well. The rising costs of finding and producing oil have far outdistanced oil price increases. The

Increased costs of drill pipe, and other materials and equipment, coupled with higher wages for labor, have pushed drilling costs—and in turn, dry hole costs—skyward. Moreover, today's drilling is deeper, more complex geologically, and in more remote locations.

returns are getting mighty lean for the great risks involved.

Part of these enormous risks are offset by percentage depletion, which recognizes a unique fact about the oil business: An oil well dies a little each day. Finally it quits altogether—becomes depleted. But even the much-misunderstood percentage depletion, with 30 years of successful operation, cannot compensate for the low rate of return on investment that has been steadily declining.

The incentive that keeps oil men going is that age-old hope of hitting a jackpot—of making a large profit on some successful investment. More realistically, however, most oil men know that the prospects for this are becoming increasingly dim: Their basic hope is to get enough return on the few discoveries to offset the many losses, and still leave something to make the risky effort worthwhile.

The high cost of dry holes poses a serious obstacle to that hope. But America's oil men—most of them unwavering optimists—feel that under the proper economic and governmental climate, they can find many untapped domestic reservoirs and help keep the U. S. among the ranks of the self-sufficient oil nations of the world.

ALL CRUDE OILS ARE NOT

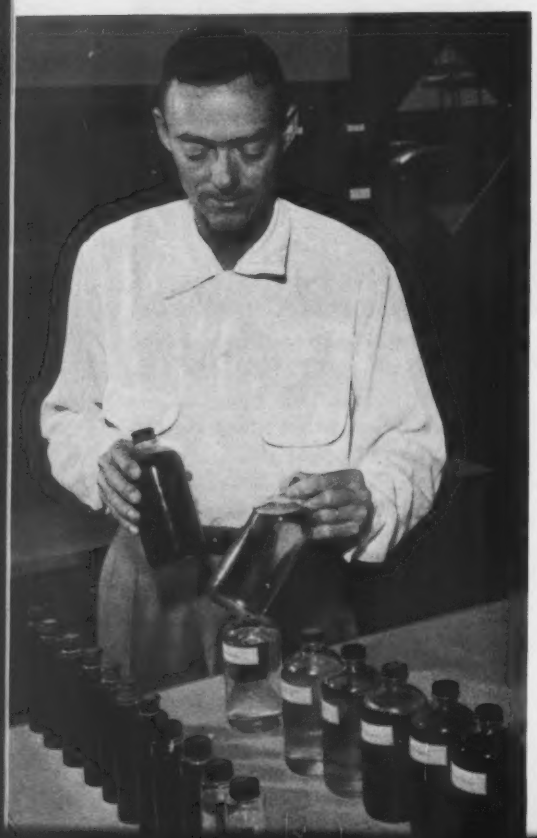
Oil men have had to learn how to make useful products from various types of crudes with widely differing characteristics

IMAGINE how bewildered a businessman would be if his wife called him at the office and asked him to "Bring home four pounds of meat for supper." What kind of meat—lamb, fowl, pork or beef? "And what sort of cut?" he would ask. Without a more specific order than "bring meat," he would be lost in a butcher shop among dozens of varieties of the food.

A crude oil marketer would be in much the same predicament if a refiner called him and ordered "50,000 barrels of crude oil."

"What kind of crude oil?" he would need to know. There are about as many kinds of crudes as there are oil fields, so refiners must be specific in their orders to get the kind they need.

Crude samples are tested in assay lab to determine what products they will yield.



All crude oils have a family resemblance, of course, because they are all made up principally of hydrogen and carbon atoms combined into various molecules called hydrocarbons. If all these hydrocarbons had the same number of atoms, joined together in the same way, all crude oils would be the same. But there are thousands of different combinations and as many different characteristics.

Take color for example. Some crudes are jet black; others vary in hue from reddish brown to a strawlike yellow. They behave differently, too. One crude oil may flow like water; another may be so thick with asphalt or wax that it must be heated before it will flow. And the varied odors of crude oils range all the way from the fairly pleasant smell of a naphtha cleaning fluid to the nostril-burning scent of rotten eggs.

Since crude oils do vary in characteristics, they must be classified so that purchasers may know what they are buying. Classifying them is no simple task.

In the early days of the industry, some oils were found to contain paraffin wax but no asphalt, while other samples contained asphalt but no wax. From that observation sprang the general classifications of paraffin-base and asphalt-base crudes. Later, oil men discovered that many crude oils contain both wax and asphalt, so a third term—mixed-base—was added. These classifications were helpful, but were inadequate to describe the oils fully.

In the 1930s, the U. S. Bureau of Mines set up one system now widely used for classifying the crudes into paraffinic, intermediate, and naphthenic types, according to bases. Nine types of crude oil are identified by this system, which is based on the weight of key fractions separated from the crude, plus certain waxing characteristics. Refiners find that the term "naphthenic" is more helpful in describing the important lighter fractions of crude oil than the older classification, "asphalt-base," which related primarily to the heavy residual portion of the crude.

Oil men often refer to the *gravity* of oil. The gravity of a crude oil is a measure of *weight,* and is important because it indicates whether the crude will yield more light or heavy products.

Another factor—and one that the pipeliner wants to know about any oil he is going to move—is *viscosity.* That is the measure of a liquid's resistance to flowing. A liquid of high viscosity—such as a heavy, asphaltic oil—moves sluggishly; while a low-viscosity oil will race along like water. A high-viscosity oil can be made to flow more easily by heating it, and often the pipeliner must heat heavy oils to keep them moving through his lines.

OBVIOUSLY, it would be impractical for pipelines to handle each of the many kinds of crude oil separately, since it would require hundreds of miles of additional line and a huge investment in additional tankage. Fortunately, however, refiners do not have to process each grade of crude separately. To simplify matters as much as possible, only those grades of crudes to be processed for specific types of products are handled separately in the pipelines. Crudes having generally similar characteristics are mixed in the lines, and the mixtures are called "streams" or "grades."

The half-million barrels or more of crude handled each day by Humble's Crude Oil Department are handled as 20 principal streams. A typical

OT ALIKE

stream, designated as *Sweden** is composed of crudes produced from 36 separate fields in Southwest Texas. No two of the 36 crudes are identical, of course, but their general characteristics are similar, so they can be mixed into a common stream for sale on the market and for processing at refineries.

IN the laboratory, a scientist can rearrange the atoms of hydrocarbons to make almost any desired product from any given crude oil. Often, however, it is too expensive to produce a desired product on a commercial scale from just any crude. So the refiner seeks crudes he can process economically with the equipment he has, to make products he can market most profitably.

A refiner with a ready market for lubricating oils, for example, would waste much time, effort, and money if he bought crudes like *Sweden* and *Refugio Light,* which are best suited for the manufacture of fuel products, but yield a poor quality lubricating oil. He would be much better off with *Panhandle* or *West Texas Ellenburger* crudes, which yield high quality lube oils with a minimum of processing.

Crude oils that are best suited for the production of certain products are called "specialty crudes." Some of the specialty crudes handled by Humble are *Hawkins,* for the manufacture of asphalt; *Conroe Mixed,* for making solvent naphthas; and *Mirando,* which may be used as a diesel fuel without further processing. There are many "marginal crudes," which are suited

*The Sweden stream took its name from the Sweden oil field, an important producer in the early days of Southwest Texas oil production. Sweden field produces only a small part of the oil going into the stream today. Several streams were named after individual fields, but many others—such as West Texas, East Texas, and Central Texas—took the names of the areas where they originate.

Heavy, molasses-like crude oil pours slowly from pipe into jar. Some crudes are so viscous they must be heated in winter to make them flow through pipelines; others flow like water.

In pipeline station, tester checks gravity and impurity content of batch of crude oil. All crudes must meet rigid pipeline specifications before they can be accepted for shipment.

Gravity of crude is determined at production lease by gauger using centrifuge; field testing also determines basic sediment and water.

Laboratory analysis of samples provides the information needed for selecting those crudes best suited for various refining processes.

primarily for production of fuel products. *East Texas* and *West Texas* types are good examples of these grades.

Although more than half of the crude oil that enters a refinery emerges as gasoline, there is no such thing as a "gasoline crude." (Unless, of course, you count condensates, which yield as much as 80 per cent gasoline, but of low quality.) Modern refining methods, however, make it possible to squeeze more gasoline out of a barrel of crude oil than was possible a few years ago. One crude may yield a high per cent of gasoline by the primary refining process of distillation, which involves boiling off the lighter components and trapping them in vessels. But by "cracking" the molecules of the heavier components left after distillation, the refiner can greatly increase the yield of gasoline.

In selecting crude oil for processing in his plant, the refiner needs to consider many factors in addition to potential yield of products. He must, for example, also consider the impurities in the crude, for removing those impurities will be an important and expensive part of the processing program in the refinery.

Sulphur, the intruder that makes sour crudes sour, is one of the most common impurities. Occurring in many forms, it produces the sharp unpleasant scent that is the mark of sour crudes. Some West Texas crude oils are well known for their sour qualities.

SINCE hydrogen sulfide, one of the most common compounds containing sulphur, is a deadly gas, tank gaugers and others working with sour crude wear gas masks to protect against dangerous vapors. Also, special steps must be taken to prevent corrosion of pipelines and refinery metals by the strong acids of sour oils. If sulphur is left in gasoline, it reduces the effectiveness of any tetraethyl lead (anti-knock) additive and also attacks engine metals. Refiners now remove the sulphur from fractions of crude oil before they are fed into processing units. One of the latest additions to Baytown Refinery's skyline is the giant Hydrodesulfurization Unit, which was built to remove this pesky impurity.

Salt is another impurity found in many crude oils. Panhandle crude is a notable example of an oil that needs desalting before it is refined. Salty crude fed into a refining unit might leave a harmful deposit in equipment. If allowed to remain in a fuel oil, it could leave an unwelcome residue in a furnace.

Even water is considered an impurity by the refiner. Most of the crude oils he receives contain some water, sometimes as much as one per cent of the total volume. Removing that water is a necessary prelude to refining.

Obviously, a refiner who is unwilling to combat impurities must select crudes that contain such small concentrations of sulphur or salt that they are harmless. Standards have been set by crude buyers and pipelines on the amount of basic sediment and water they will tolerate in the oil they buy, usually one per cent. Crude that meets these standards is called "pipeline oil."

Despite all the differences in types, grades, and characteristics of the various crude oils, modern refiners are able to turn out finished products of exacting quality and remarkable uniformity. Their task would be much more difficult were it not for the accepted classifications and standard terminology used throughout the industry.

Show judges, Mr. and Mrs. E. M. Schiwetz and Mrs. Virgil Childress, select *Blanco River* by A. E. Kaeppel as first prize painting in exhibition. Hand-carved gun stocks were exhibited by Keenan Winne.

PART-TIME PAINTERS

Humble employees demonstrate their skill as artists with fifty works exhibited in third annual art show

A GROUP of men and women sat on camp stools or in deep clover on the green slope of a bayou bank. Occasionally one of the men ambled slowly through the assembly, stopped briefly to comment, and then returned to his own chair. The scene before the people was taking form in a variety of styles on canvas and watercolor paper.

The man moving about was a professional artist, an instructor; the others were Humble employees taking an art lesson. The scene is repeated often during the year.

The students are some of 60 employees in the Houston Office who are members of the Humble Club Art Group. Several have been painting as a part-time avocation for many years; others have only recently started trying to master the fascinating problems of easel and brush. All are intent on developing techniques and on gaining greater skill in self expression.

Many of these part-time artists spend their holidays and weekends traveling about Texas in search of interesting and beautiful scenes to sketch; their vacations often are planned as much to gather material for pictures as for personal recreation.

It is this enthusiasm for art, this love for trying to create beautiful and meaningful pictures, that brought about the organization of the Art Group three years ago. The same enthusiasm has given rise to the annual Humble employees' art show each Fall.

The first public showing of the group's work was held in 1955, with a mere handful of paintings. In the following year seven artists exhibited 26 pieces of work. Six paintings from this 1956 show were purchased by THE HUMBLE WAY and were printed in the January-February, 1957, issue. In the 1957 Fall show 22 artists exhibited 50 paintings and sketches, one wood carving, and one piece of sculpture. Fifteen of the artists are Houston Office employees or wives of employees; the other seven are employees in the Company's Corpus Christi division office.

THE HUMBLE WAY has again selected and purchased some paintings from this exhibition, five of which appear in this issue.

The top prize winning painting of the 1957 show is reproduced on the cover. It is the work of A. E. Kaeppel, who also won first prize in 1956, and is currently president of the Art Group. Another of his exhibited oil paintings is reproduced on the next two pages.

Plans are already being made for the Art Group's 1958 Fall show, to be held in Houston during Oil Progress Week. "We hope to make this year's exhibition much larger, and are anxious to have good representation from all areas where Humble people work," President Kaeppel says. He is contacting art enthusiasts in all major divisions of the Humble Companies to encourage participation. The goal for the 1958 show is "more than 100 paintings."

VACATION'S END . . . *An oil painting by Mrs. Rosemary Habermacher, Exploration Department. Mrs. Habermacher was an award winner in the 1956 show.*

BEYOND . . . *An oil painting by A. E. Kaeppel, Exploration Department. Kaeppel's painting,* BLANCO RIVER *on the cover was the first prize winner in the 1957 show.*

BOLIVAR LIGHTHOUSE . . . *A watercolor painting by Charles Becker, Pipe Line Company engineering section. This was the first time Becker had entered a painting in competition.*

MILL ON THE BAYOU . . . *A watercolor by Ivy E. Davis, Production Accounting. Davis was an award winner in the 1956 show.*

Humble employees in Houston office make good use of savings and loan facilities provided by credit union. Dale Murphy, left foreground, is manager. Credit unions are organized to promote thrift and to offer credit for provident, productive purposes.

WHERE CREDIT IS DUE

Employee credit unions make it easy for members to save money, and to borrow it

AN URGENT telegram greeted Humble credit union officials in Houston one morning as they opened for business.

The wire, datelined Helena, Montana, was from a vacationing Humble employee and credit union member. Nearly 2,000 miles from home, his car had developed serious motor trouble. He was almost out of money, and had to be back in Houston in three days. Could the credit union lend him $200 to have his car repaired and wire the money to Montana?

The credit committee met immediately, checked the man's record, approved the loan, and sent the money within an hour.

This is only one of the thousands of examples which point up how important credit unions have become in the lives of Humble employees. Besides aiding stranded motorists, credit union loans are helping put sons and daughters of Humble employees through college, are financing home repairs, automobiles, summer vacations, medical expenses, and countless other worthwhile items.

How much Humble employees have come to depend on their credit unions is proved by the ledgers. Last year more than 9,500 loans totaling about $5,750,000 were made to members by 19 Humble employees credit unions. Savings deposits of the more than 16,000 members amount to nearly $6,300,000.

Credit unions often have been called "working men's banks" or "employees' savings and loan associations." Actually, they are a combination of the two. All over the United States and in many foreign countries members use credit unions for two basic purposes: to accumulate savings, and to make loans to each other from those savings. In accordance with federal law, credit unions are organized "to promote thrift among their members and to create a source of credit for provident and productive purposes."

You find them everywhere—from the Borough of Brooklyn to the Texas

Outboard motor boat was purchased by refinery employee D. M. Waltman with help of loan from Baytown Employees Credit Union.

Gerald Morgan used a credit union loan to help buy one-third interest in airplane; his partners are two other Humble employees.

Panhandle. The Humble employees credit unions scattered from Odessa to New Orleans, Pampa to Encino, are all part of this nationwide movement, although each union is completely separate and independent.

Last year in the United States, there were about 18,600 active credit unions with more than 7 million members. Total assets: about $3,348,000,000.

The idea for credit unions originated in Germany more than 100 years ago, but did not gain official recognition in the United States until 1909 with the passage of a credit union act by the Massachusetts Legislature.

THE movement picked up steam, however, only after the Federal Credit Union Act was passed in 1934, a depression year of heavy debts and glib loan sharks. Under this Act, various groups with common bonds of association, occupation, or residence were permitted to organize credit unions under federal charter.

Shortly after this legislation went into effect, the first Humble employees credit union was born. Organizers hoped that as many as 100 Houston Office employees might join and deposit at least $10 each in the organization. Instead, a surprising 273 employees signed up when the federal charter was granted January 14, 1935.

A few weeks later, employees at Baytown Refinery also decided to organize a credit union. From there the idea spread gradually to other areas where sizeable numbers of Humble employees were headquartered—Pampa, Longview, Houston Sales Office, New London, Gladewater, Katy, and Conroe.

In 1950 the movement jumped to New Orleans, then to Corpus Christi, Houston Pipe Line Southern Division Office (Houston), Refugio, Beaumont, Jourdanton, Encino, and Abilene. Newest Humble employees credit union was formed in Tyler in 1956.

Credit unions—wherever they may be—are organized and operated basically alike. All have exacting federal or state charters, strict by-laws governing their business procedures, specific organizational structures.

Take a typical Humble credit union, for example, like the one at Corpus Christi. It has 798 members with savings accounts totaling $244,221, and since receiving its state charter in 1952 has made 2,077 loans totaling $1,256,922. During the annual meeting, members elect a nine-man board of directors, a three-man supervisory committee, and a three-man credit committee. The directors, in turn, elect officers.

These men run the credit union for one year, just as new directors might perform their duties with a small bank. They approve or disapprove loan applications, audit the books, watch over the funds, accept payment and interest on loans, deposit savings, and pay dividends on these savings to individual members.

Only one of these officials—the treasurer—is paid. For this part-time salary, he serves as general manager of the association in its day-to-day operations. He also has one full-time salaried clerk and one part-time clerk to handle normal business details.

To become a member of the Corpus Christi credit union, all a Humble employee in that area need do is pay a 25 cent membership fee, buy a $5 share of stock, and be approved by the board of directors.

Accountant Charles Church obtained a credit union loan to buy a new automobile.

Obtaining a loan is almost that simple. There's an application to fill out, but no interview. If the credit committee approves the loan, a check is waiting for the employee the following day. Members may borrow up to $400 on their signatures, up to $28,000 with security. Interest rates are never higher than 1 per cent per month on unpaid balances, usually lower. Dividends average about 4¾ per cent.

That is the general operational pattern of employee credit unions all over the country. You may find minor differences in individual organizations, however, such as the amount of the treasurer's salary, number of clerks, type of charter, interest and dividend rates, loan ceiling, and collateral requirements.

Standing-room-only crowd attends annual meeting of the Baytown Employees Credit Union where members elect new directors, committees and approve the dividend rate on savings.

THE two biggest demands for Humble employees credit union loans are for debt consolidation and purchase of automobiles. Members have, however, borrowed money for everything from babies to bathtubs.

One secretary who formerly lived in London, England, borrowed money to fly home during vacation. Another woman employee once used a credit union loan to buy a tractor. Dozens of engagement and wedding rings have been bought with money borrowed from credit unions. One employee was loaned more than a thousand dollars for his son's college education. More than $500 was approved for a family vacation trip to California.

Hundreds of Humble employees have used credit union loans for buying boats and fishing equipment. Still others have used loans for new babies, sickness, or funerals in the family. Demands on Santa at Christmas regularly bring an upswing in loan applications. Home repairs, television sets, fur coats, washing machines, golf clubs—you name it and credit union loans probably have financed it.

Turn downs are a rarity with Humble credit union members. One official estimates that more than 98 per cent of all loan applications are approved.

Loan repayment records are even more impressive. Credit unions, in fact, have become famous for their safe operations through the years. The national average for non-payment last year on all credit union loans was only one in 1,600.

Humble employees boast an even better mark. In the Houston Office, for example, the delinquency rate is one in 13,000. Since 1935 that credit union has loaned more than $38 million and has lost less than $6,000. And about half of that sum represents loans to men who never came back from World War II.

The social and moral pressure of owing money to a fund that represents the savings of fellow workers apparently has a far more potent effect on repayment than legal pressure. "Time and the law of averages are on our side," says a credit union official.

Credit union financed this home freezer now being enjoyed by Jess Heller family.

To protect against possible loss, however, all federal credit unions are required by law to deduct 20 per cent from their net profits each year before dividend distribution as a reserve against bad loans. All Humble credit unions now have substantial sums in that reserve fund. One has accumulated more than $148,000.

And as an added safety factor for some of the groups—like the ones at Baytown, Corpus Christi, and Longview—all loan accounts up to $10,000 are insured against death or disability of the borrower.

OBVIOUSLY, the credit unions have won popular acceptance among Humble employees. And for good reasons. Credit unions provide a double barreled answer to financial worries by promoting thrift and providing quick, low-interest loans in emergencies. In many cases the credit union will approve a loan that could not be obtained from a commercial lending institution. Credit unions are convenient, being located usually in the building where members work.

Probably the most important selling point of credit unions, however, is that they promote and encourage savings. As one new member expressed it, "I am saving regularly now for the first time in my life."

Through credit unions Humble employees have learned there is a better place and a better way to save money than by dropping an occasional coin in the sugar bowl, or tucking a spare dollar or two under the mattress.

Radar traffic control, in action above, makes enforcing vehicle laws on Texas thoroughfares more efficient, but 587 patrolmen still face an awesome task: monitoring driving habits of four million motorists on 53,434 miles of highway in the four corners of a sprawling state.

THEY FIGHT HIGHWAY DEATH

Last year 2,539 persons died on Texas roadways. The toll would have been greater but for the Texas Highway Patrol

EVEN as he approached, the patrolman could see the speeder was fuming mad. He stood scowling in the sun besides his big four-door sedan. In the front seat sat his wife and, in the back, three youngsters below school age.

"Mister, you were going close to 90," the patrolman began quietly. "In heavy traffic like this, you ought to have some regard for your children's lives even if . . ."

"Listen," the man broke in, "just skip the safety sermon and give me a ticket. If I want to kill those kids, it's my own business."

Shocking? Yes, even to men with cast-iron composures; men who for years have waged total and unrelenting war on highway death; men who have witnessed the most gruesome examples of man's inhumanity to man on Texas highways—the 587 men of the Texas Highway Patrol.

Another patrolman recalls the time he chased and caught a woman driver doing about 80 mph. Motioned off the road, she ran him across an esplanade, forcing him to dodge oncoming traffic. When finally stopped and asked for her driver's license, she handed it over and giggled coquettishly: "Why, officer, your hand is shaking like a leaf."

Happily, all Texas drivers aren't so flagrantly thoughtless. All the same, death-dealing highway accidents "happen" every day—with frightening, clock-like regularity. Seven persons die on Texas highways every 24 hours; every four minutes someone is injured. In 1957 alone, law enforcement officers investigated 200,000 accidents that sent 2,539 persons to their death, 122,000 more to the hospital, and resulted in property damage amounting to $277 million.

Col. Homer Garrison, Jr., director of the Texas Department of Public Safety, has a grotesquely graphic way of illustrating this senseless toll of life and limb.

"Fill Memorial Stadium here in Austin," he says, "with the 60,000 Texans it will seat. Then march them out single file. Kill the first one, then maim the next 42. Keep on doing this until the stadium is empty. When you're done, fill up the stadium and repeat the process. That gives you an idea of what highway accidents do to Texans every year."

Texas' sanguinary highway record is only part of a disturbing national problem. More Americans have been killed in auto accidents than in all our wars put together. In 1956 alone, 1.4 million persons were hurt; of this number, more than 40,000 died.

Traffic carnage affects American industry, too. Autos used by employees in getting to and from jobs have proved far more deadly than in-plant

hazards. That's one reason why Humble and other companies are interested in safe driving and the work of the Highway Patrol.

The job of policing the vast network of Texas highways is a gargantuan task. Traditionally, Texans are a mobile breed. Automobility started in 1899, when E. H. R. Green of Terrell, a railroad president, became the first man to drive a car on Texas roads. Last year, four million licensed drivers traveled 42 billion miles on the 53,434 miles of improved roadway.

The patrolmen themselves drove almost 19 million miles on these highways, making 225,000 arrests for motor vehicle violations and obtaining convictions in 95 per cent of the cases. You may drive clear across the state and never see one patrolman, but chances are that several will see you.

Highway crashes like this one have killed more Americans than all our wars combined. Aside from fatalities, Texas roadway accidents in 1957 injured 122,000, cost $277 million.

THIS brand of vigilance is paying off in a big way. By helping shave the 1937 death rate (14.6 per 100 million vehicle miles) to its present level (6.0) the Highway Patrol has been instrumental in saving an estimated 34,439 lives—a group of Texans equal to the entire citizenry of Temple, Harlingen or Orange.

You may sometimes mutter at him under your breath, but the Texas Highway Patrolman is a very special type of citizen. He is selected carefully and trained painstakingly. Only one of nine original applicants makes it. Once the patrolman puts on the badge, he finds that he can always be certain of a hard day's work and never sure of a good night's sleep. His adventures are robust, his promotion slow, his wages only fair. But there's something about being an officer of the law—with death in one hand and mercy in the other—that appeals to a man.

The history of the Patrol rivals the Texas Rangers in color and national prestige, if not in years. Both are divisions under the recently reorganized Department of Public Safety, the multi-armed agency responsible for the well-being of almost nine million Texans. The famed Rangers, oldest state law enforcement body on the continent, were formed in 1823; they are charged chiefly with criminal investigation. The Highway Patrol dates back to 1930; 90 per cent of its work deals with automobile traffic outside established city limits.

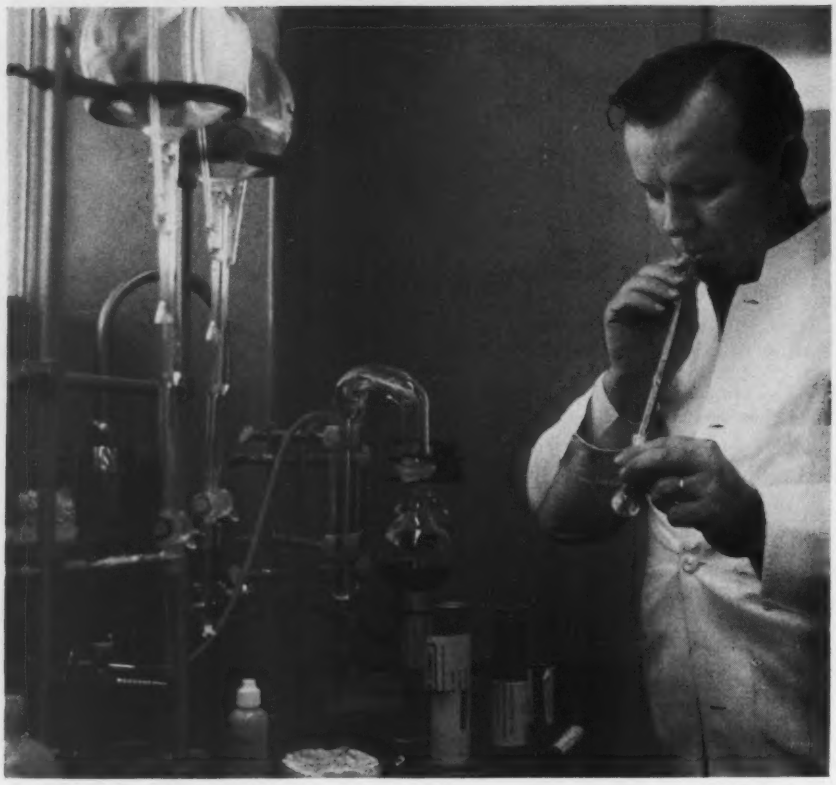
Above and beyond their persistent efforts to control the ever-increasing traffic problem, patrolmen are called on to assist in every sort of emergency. There are tales of service in time of disaster—flood, explosion, and tornado—and work in prison riots and breaks. Death in the line of duty has been the lot of 14 patrolmen. The honor roll includes motorcycle Patrolmen E. B. Wheeler and H. D. Murphy, slain in 1934 while trying to apprehend notorious criminals Clyde Barrow and Bonnie Parker.

THE "country cop," as patrolmen are sometimes called, is as fast on the draw with a good deed as with a revolver. An average month sees him helping dozens of motorists who run out of gas, have flats but no tire tools, stall their cars, or are otherwise in distress. Several patrolmen have delivered babies; one has two to his credit.

Patrolmen know the highways they ride as other men know the streets where they live. Working six days a week in 10-hour stretches, they learn the business problems and personal

Violator contact is most common and very important phase of Patrol work. Patrolmen usually work in twos. One approaches delinquent driver; partner covers him at right and rear.

Traffic violators find patrolmen courteous, more inclined to give warning than ticket.



Drunk driver test by laboratory technician typifies the varied behind-the-scenes activity at Texas Department of Public Safety in Austin which backs up Highway Patrol in the field.

life histories of every service station, motel, and cafe operator on the beat. Like truckers, they know where to get the best cup of coffee. Usually, they work in twos.

Most violators, patrolmen know, are not malicious speed merchants, but just day dreamers. They are average citizens. Once in a while, though, someone tries to outrun a patrol car. It never works: everything is on the lawman's side. He has a better car; he's a better driver; there's his radio. The speeder's guilty feeling works in the patrolman's favor. Too, the speeder meets more hazards, and meets them first.

THESE men who roam the asphalt range have a sturdy, if secret, sense of humor. Especially amusing to them is the endless array of fables they hear about themselves.

Here are just a few:

(1) An influential man or pretty girl with a 200-watt smile can talk their way past a ticket. (2) If you get inside the city limits, the Patrol can't touch you. (3) Patrolmen get mad at motorists who slow down when they see a patrol car; in fact, they hate all violators. (4) They have a regular quota of tickets to issue.

The truth is that all violators get the same treatment; a patrolman can pursue you right into your front yard to serve a ticket; officers are pleased when fast drivers see them and slow down ("It shows, at least, that they're alert."); they don't hate traffic transgressors, but justly suspect that most violators have little use for them.

There is no quota, but if there were it would be a cinch to meet with a little black box called radar. Texas Highway Patrolmen welcomed this electronic assist in 1954. Unpopular with speeders, it makes for more arrests, more convictions and, it is hoped, safer highways. Speed timing by radar is legal and accurate; all 48 states are using it effectively.

Imaginative motorists make all sorts of bizarre attempts to "jam" radar sets (example: steel balls in hub caps), but nothing works except another radar unit (cost: about $1,000). Use of radar has given rise to "high signs" among motorists, particularly truck drivers. An oncoming car blinking its headlights in daytime probably is warning of a mechanical cop ahead. Patrolmen know about the tip-offs, but shrug and say: "They slow down, don't they?"

Officers are still talking about two elderly persons who were stopped after being clocked by radar. One wanted to know how radar knew he didn't have a driver's license; the other indignantly said he was "so shot full of radar beams I can hardly straighten up."

A woman reported that when she passed a "Speed Limits Enforced by Radar" sign, her car slowed to 55, wouldn't go a bit faster.

A tour of the Department of Public Safety in Austin, the official home of the Highway Patrol, makes you realize that accident prevention work is no accident. Here are headquartered the many men and women needed to keep the first-line safety soldiers—the patrolmen—at the front.

You meet N. K. Woerner, statistical services chief in whose hands a mimeographed sheet of figures becomes a dramatic thing. Mr. Woerner has the dubious honor of predicting how many Texans will die during major state holidays. This he does with deadly accuracy. Last Holiday Death Watch (Dec. 21 to Jan. 1), he said 113 would die. The toll was 103. Mr. Woerner was happy to be wrong.

IN DRIVER Improvement, you are shown your personal driving record, complete with tickets, both city and rural. Here, driving is referred to as "a privilege, not a right," and the Texas penalty system is explained tersely:

"It is Texas' policy to suspend a driver's license only after all else fails. At your third ticket for a moving traffic violation in a five-year period, your file is flagged and you are sent a safety letter urging that you improve your driving habits. Comes the fourth entry, you must re-take the driver's test; at the fifth, your driving privileges are subject to suspension as an habitual violator of the traffic laws."

You visit laboratories where modern tests impersonally put the finger on the genuinely drunk driver. You meet the men of License and Weight, Driver's License, Safety Responsibility, Motor Vehicle Inspection, Identifications & Records, and other divisions which work closely with the Highway Patrol in the field.

Finally, you come to the photographic lab, where a smocked technician says that most people just can't conceive of the terrible things that happen to a human being when his car crashes head-on into a ton of metal moving 60 mph. "If they could see pictures like these," he says, "they'd understand." And he hands you a sheaf of wreck scenes with people dead —and hard to look at.

Currently underway is a 13-year road building program which many traffic experts think will brighten the drab safety picture. This will add 41,000 miles of new interstate super-highways to our country's road system—8,000 miles of it in Texas.

BUT driving the "supers" is different, and these new roads could add to Texas' traffic troubles. The driver's new enemy is highway hypnosis and frozen vision—result of constant purr of a smooth engine, hum of tires, sameness of scenery, fixed eye position, and general monotony of easy car operation. Experience already shows that super-highways spawn fewer, but considerably more deadly, accidents.

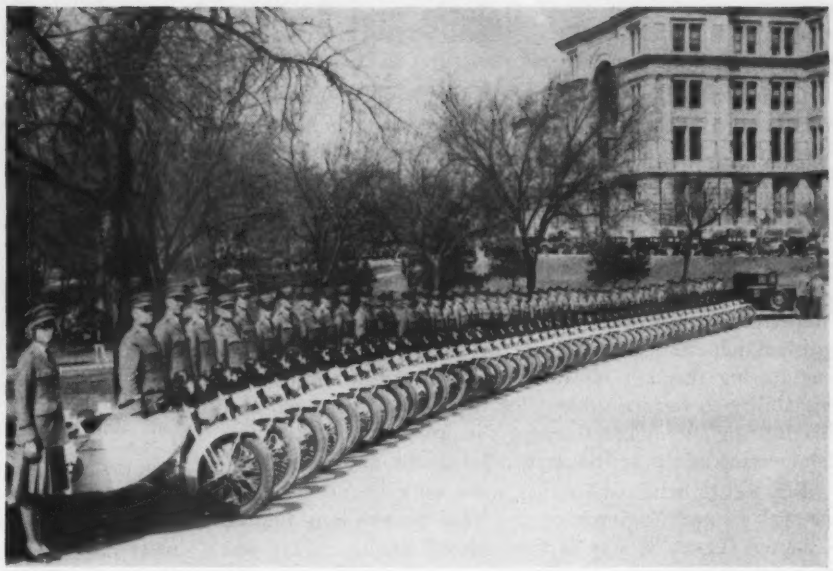
More and more, safety is being built into cars. Innovations like safety belts, padded dashboards, and sure-lock doors are saving lives daily by reducing accident severity. But these safeguards do not reduce the number of collisions and experts are asking: Do they encourage a false security?

Since cars are a good deal safer than people, driver education is receiving a lot of attention. Special studies are attacking the auto-accident problem by considering it a nationwide epidemic. Psychologists are trying to figure why some people seem to suffer from a curious mental quirk that makes them look on driving as something to which the ethics governing ordinary behavior do not apply.

Ask the nearest patrolman who Texas' really bad drivers are, and he will by-pass teenage hotrodders, flighty women, doddering farmers, and migrant workers. "They defy classification," he will say; "most of them are just plain ordinary drivers."

He may, however, place accident-prone motorists in three broad categories: those who can't drive, those who don't know the laws, and those who won't drive right.

"These three groups represent perhaps 15 percent of the driving population and cause a majority of the accidents," says one safety education sergeant. "They need a patrolman in their lap every foot of the way."



Long gray line of patrolmen—graduates of first Patrol School in 1930—posed with comely mascot on State Capitol grounds. Nowadays, motorcycles are used only for special service.

One promising driver education approach is called "defensive driving." The defensive driver is always ready for the other driver or pedestrian to do the wrong thing.

Texas traffic authorities believe public opinion *could* save more lives than engineering, education, and enforcement put together. "Motor manslaughter will never be stopped," one says, "until reckless driving becomes a moral issue—like horsestealing did. Too often, tickets are considered operating expenses rather than censure of improper driving habits."

"There's definitely something wrong," says another, "when a man can—and will—brag to decent people that he averaged 90 mph between this city and that. He should be treated as a public villain."

To combat the humiliating victories of horsepower over will power, driver attitudes must undergo drastic change. This is the studied contention of former Texas Highway Patrolman Homer Garrison, Jr.

"The automobile," he says, "is a lethal weapon. Somehow, some way, we must learn to use it wisely and respect it well."

Mountain of accident reports arriving daily at Department of Public Safety illustrates Texas traffic problem. Statistical staff under N. K. Woerner, above, handles half a million a year.

Reistle and Suman Honored by Engineers

Carl E. Reistle, Jr., Humble's executive vice president, was honored February 19 in New York by the American Institute of Mining, Metallurgical and Petroleum Engineers. Also honored was John R. Suman, formerly a Humble vice president and director who later became a vice president and director of Standard Oil Company (NJ).

Mr. Reistle received the Anthony F. Lucas Gold Medal, a major award of the Institute and an outstanding honor in petroleum engineering. He was named "for his distinguished achievements in advancing the science of petroleum engineering through his own technical contributions and his ability to inspire others; for his forward concepts and his untiring energy in advancing the profession of petroleum engineering as a practitioner, administrator, and executive."

Mr. Reistle received another honor on February 21 when he was named Engineer of the Year by the San Jacinto Chapter, Texas Society of Professional Engineers. He was presented the coveted plaque at ceremonies in Houston.

Mr. Suman was honored in New York by AIME with the John Fritz Medal, one of the engineering profession's most distinguished awards. He retired from Standard Oil Company (NJ) in 1955 and now lives in Houston, where he is an oil industry consultant.

Carl Reistle Jr., left, receives Anthony F. Lucas Gold Medal from 1957 president Grover Holt.

John Suman, left, receives John Fritz Medal from Dr. Lewis Sillcox, chairman, Board of Award.

Paraxylene Unit to Be Expanded

Humble's paraxylene production will be increased from 44 to 66 million pounds a year as a result of expansion of the paraxylene unit and modification of other facilities at Baytown Refinery.

When the project is completed in July of this year, Humble's paraxylene unit will have the largest capacity of any such plant in the nation. It will produce 98 per cent pure paraxylene, a raw stock used in making synthetic fibers.

The original unit was completed in 1953. It had been designed to produce 25 million pounds a year, but even before it was completed, additional steps were taken to increase its capacity to 31 million pounds.

As demand for the product increased, more changes were made to increase the output to its present level of 44 million pounds a year.

The paraxylene unit addition is part of Humble's program of expansion in the petrochemical field.

Humble Credit Manager Retires

F. R. Springer, who served as Humble's credit manager for 22 years, retired March 7 after more than 40 years' service.

He became one of the Company's few 40-year men on January 4 and was presented his service pin by H. W. Ferguson, vice president and director in charge of refining and sales.

Springer Ferguson

During his long career, Mr. Springer saw service as a sales clerk, price clerk, station auditor, stock clerk, salesman, chief clerk, and supervisor of credits and collections. He was named credit manager in 1936.

Special Retirement Program Announced

A temporary program of voluntary early retirement for eligible employees age 55 and over was announced by the Humble Companies on February 1, to continue through July 31, 1958.

Under this program, a special allowance is being made to partially replace the discount caused by early retirement. The amount of this allowance depends upon the annuity already purchased by Company and employee contributions, and the employee's present age.

The program is being inaugurated for two basic reasons: to help alleviate a surplus of personnel brought about by current business trends, and to aid long-service employees in specified categories who desire to retire early.

As operations in the Humble Companies have decreased in recent months, a surplus of personnel has developed in several departments. Studies were made of this factual and acute problem and, after considering many alternatives, Humble's management felt that as a first step early retirement should be made especially attractive for those who are eligible and who desire it. This was done by providing an added allowance that is given in addition to early retirement income.

Some employees in the past have desired early retirement, but felt it would not be economically feasible. Under this special program, however, with its added allowances, early retirement has become much more attractive.

Leesemann Heads New Refinery Division

C. J. G. Leesemann, formerly a research associate in the Research and Development Division at Baytown Refinery, has been named to head the Refining Department's newly formed Supply and Coordination Division.

In his new position, Mr. Leesemann is responsible for coordination and liaison between the Houston Office and Baytown Refinery and customers on matters relating to coordination of production and supply of products.

'Texas in Review' Discontinued

"Texas in Review," Humble's weekly television program, was discontinued March 4 after more than six years of viewing by Southwest TV audiences.

The 30-minute program had been on the air since January 1952, and when discontinued was carried by 26 television stations in Texas.

In a letter addressed to Humble dealers and agents, Sales Manager F. A. Watts said:

"This decision, although a difficult one, represents the consensus of those whose responsibility it is to direct the expenditures for the Company's over-all public approach. It was arrived at only after long and careful consideration of many factors, including audience studies and surveys."

Discontinuance of the program does not mean that Humble is withdrawing from television. Plans for future use of TV now are being developed and will be announced at a later date. These plans include coverage of Southwest Conference football games, both with live telecasts and game highlights, as in the past.

Recent Retirements

HUMBLE PIPE LINE COMPANY

Name	Location	Date of Retirement	Years of Service
John D. Exline	Navasota Station	March 1	38
Lewis A. Johnagin	Cisco Connection	February 1	35
Robert A. Rosinbaum, Sr.	Hawley Station	March 3	31
Robert G. Ross	Navasota Station	March 4	31
BAYTOWN REFINERY			
Clyde Clotiaux	Paint Department	March 9	28
Kermit K. Compton	Electric Shop	March 1	28
Frank R. Cutbirth, Sr.	Power Water System	March 1	37
Patrick B. O'Sullivan	Mechanical Gen'l Dept.	February 10	36
Grover C. Pickering	Labor Department	March 21	48
Aaron W. Smith	Storehouse	February 24	33
Eugene H. Smitherman	Labor Department	March 9	30
Clyde D. Thompson	Pipe Department	March 1	33
Amos E. Waldrop	Power Water System	February 19	29
Sam E. Zimmerman	Distillation	February 14	36
EXPLORATION DEPARTMENT			
Walter S. Sollenberger	Mexico, D. F.	February 1	31
MARINE DEPARTMENT			
Axel E. Lindquist	Baytown	March 1	36
PRODUCTION DEPARTMENT			
Leon B. Barber	Kelsey District	March 1	36
Eugene J. Briggs	Gladewater	March 8	29
Homer A. Perkins	Raccoon Bend	January 21	28
Lawrence G. Reuwer, Sr.	Friendswood District	February 18	33
John W. Rodgers	Tomball	March 5	34
James C. Shelton	Conroe District	March 1	29
Warren L. Smith	Government Wells	January 30	33
James H. Sorrells	Tom O'Connor Gas Plant	March 22	31
Alvin B. Vanhooser	Imogene	March 1	39
John W. Worth	Friendswood	March 13	30
SALES DEPARTMENT			
Herbert J. Bilhartz	Southwest Tex. Div. Office	February 1	26
HOUSTON OFFICE			
Charles K. Beauchamp, Sr.	PL-Communications and Electrical Department	February 12	28
Archie B. Campbell	Refining Dept.	February 8	45
Gwynn W. Jones	Production Operating	March 1	31
Emery M. Kirkpatrick, Sr.	Office Buildings	February 24	22
Frances B. Scott	Annuities and Benefits	March 1	20
Frank R. Springer	Sales Accounting	March 7	40

Deaths

Employees: Joseph L. Campeau, 58, helper at Baytown Refinery, on February 13; William H. Cherry, 60, lease pumper-gauger at Greta, on February 2; Fred E. Jacob, 59, head stock gauger at Alice District, on December 29; Fred B. Johniken, Sr., 52, lease pumper-gauger at Talco, on February 23; George W. Kerce, Sr., 58, lease pumper-gauger at Anahuac, on February 14.

Charles L. King, 45, chief clerk (acting) at Baytown Refinery, on February 7; Raymond J. Kinstle, 58, field gauger in Odessa District, on January 2; Bennie L. Knight, 34, roustabout at Winters District, on January 30; John B. Lancaster, 58, assistant division maintenance engineer in the Northeast Texas Sales Division Office, on January 12.

Eugene C. McAfee, 53, pipeliner at Longview, on February 17; Ralph Morse, 55, station operator at Bateman Station, on December 29; Dan C. Rhodes, 51, assistant division superintendent of the Gulf Coast Division, on January 4; Willie Sloan, 56, roustabout derrickman at London, on January 31; Norman M. Sommer, 46, statistical clerk in Sales Operations & Engineering in the Houston Office, on December 30; Leander Tucker, 57, pipe fitter first at Baytown Refinery, on February 24; Benjamin F. Wiley, Jr., 23, junior geologist in Exploration Department in Louisiana, on February 1; J. C. Winningham, 44, gas plant operator first at Conroe Gas Plant, on January 25.

Annuitants: Olin A. Griffin, 65, former senior division clerk in the Southwest Texas Division Office, on February 18; James O. Hall, 68, former helper at Baytown Refinery, on February 22; Roger C. Huder, Sr., 69, former cashier in the Treasury Department, on January 22; Berry Jelks, 70, former porter in the Sales Department at Beaumont, on February 23; Arnold M. King, 61, former district gauger in the Cisco District, on February 2.

Oscar H. Lundy, 73, former accounting clerk in the Sales Department in the Houston Office, on December 27; Ira Moore, 79, former houseman and controlman at Baytown Refinery, on February 9; Clarence R. Nelson, 67, former lease pumper-gauger at Pampa, February 3; David P. Olcott, 61, former head of Statistical & Evaluation group in Exploration Department in Houston, on February 21; John W. Pickens, 73, former witness gauger at London District, on December 30.

Everett E. Saxon, 60, former chief operator in Power and Water Utilities Department at Baytown Refinery, on February 10; Frances M. Smith, 61, former chief telephone operator at Baytown Refinery, on February 3; Rufus H. Wallace, 79, former engineer at Skidmore Station, on January 4.

By the way

● Whenever and wherever an artist sets up his easel, he can be pretty sure that some curious passer-by will soon be peering over his shoulder to see what he is doing. Al Kaeppel was reminded of this human foible last September, when he was painting the scene reproduced on the front cover. The site was near a low-bridge crossing on the Blanco River near Wimberley, in the dude ranch country of Central Texas. Al had set up his easel and was starting to work on his painting when a car stopped and a lady got out.

"What are you going to paint," she asked brightly. Al swept his hand across the view in front of his easel. "The river," he answered simply.

An hour later, the same car stopped again and the same lady got out to peer over Kaeppel's shoulder. She

studied the picture taking form on the canvas. "You still painting that river?" she asked. Al nodded. The lady examined the painting again for a moment. "You know," she said helpfully, "you can buy a good picture of that river on a postcard at the Wimberley store."

● To most motorists, the sight of an approaching Texas Highway Patrol car brings sweaty palms and a guilty glance at the speedometer. To drivers in distress, however, no sight is more welcome.

So testifies staff writer Will White, who wrote the story on page 18. Researching the story, he rode with Patrolman R. L. Robbins for a full 10-hour shift on his Gulf Freeway beat from Houston to Galveston. Among other things, Patrolman Robbins mentioned the good neighborliness of the Patrol—how they help change tires, start stalled engines, and carry gasoline for stranded motorists.

A few weeks later, White was driving from Houston to Galveston when he had a blowout 15 miles out of Houston. Sadly, he remembered his spare tire was in a service station being repaired. It was a dark, freezing cold night, and the writer had no luck in his attempts to flag the fast-moving autos on the four-lane super-highway.

Then came an idea. He recalled having read that in an eastern state, drivers tie handkerchiefs on their door handles to signal highway patrolmen for aid. He had no handkerchief, but found a ragged towel and tied it on the door.

Just as our writer was falling into numbed slumber, a Highway Patrol car did stop. The patrolman had read the same article and taken his cue. His name—to the mixed pleasure and embarrassment of our motorist in distress—was R. L. Robbins.

● It is quite by coincidence that this issue of THE HUMBLE WAY, carrying a story about highway safety, goes to press at the same time a large group of civic and business leaders from 14 states are converging on Chicago to attend a special conference called by President Eisenhower's Committee for Traffic Safety. The purpose of the conference is to mobilize wider and more effective support for the President's Highway Safety Action program.

Among the more than 100 Texans attending the conference is Humble's President Morgan J. Davis. He is serving as chairman during two conference sessions at which representatives from Texas discuss the state's highway safety needs.

"It is hoped," Mr. Davis said before the meeting, "that this conference will focus the widest possible attention on the urgent traffic safety needs of our state and its communities."

The Humble Way

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Research geologist makes photomicrographs of spores and pollen fossils in studies to determine the geologic age of subsurface sample. Such knowledge may help in the search for oil.